[-Person] and [+Person] resumption in Igala

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1. Introduction

This paper investigates resumptive pronouns (RPs) in A′-dependencies in Igala, a Benue-Congo language spoken in Nigeria. RPs are obligatory in Igala for non-locally extracted subjects, relative clause subjects, and extracted complements of prepositions. These RPs are sensitive to movement restrictions; in the literature, this has been taken as evidence that such RPs are the spell-out of lower copies of an A′-movement chain (e.g., Koopman 1984; Engdahl 1985; Sichel 2014; Scott 2021). RPs in non-island A′-dependencies in Igala surface without person features, which has been argued to be predicted by the copy theory of movement and the theory of chain reduction, which deletes or reduces all movement copies in a chain except for one (e.g., van Urk 2018 on Dinka Bor, and Scott 2021 on Swahili). Landau (2006) proposes that movement copies are not fully deleted if this is ruled out by a phonological constraint. In such a case, a partial copy is pronounced, which results in a pronoun with a reduced feature matrix.

In Igala RPs, person features are always deleted in the singular, so that the RP of a 1st or 2nd person DP surfaces as a 3rd person pronoun; in the plural, either both person and number are deleted, so that a 1st or 2nd person plural DP surfaces as 3rd singular pronoun, or all features are retained and it surfaces as a fully matching pronoun. Crucially, a 1st or 2nd person plural DP cannot be resumed by a 3rd person *plural* pronoun. This is different from what is found in a number of other languages, where the plural feature survives chain reduction. Resumption in Igala therefore presents us with two puzzles: (i) chain reduction is optional in the plural, and (ii) person and number are obligatorily bundled in the plural.

The first puzzle relates to the question of how exactly chain reduction works. According to the view advocated in Landau 2006 and Scott 2021 (see also Harizanov & Mikkelsen 2018), if a movement copy cannot be deleted fully due to a PF requirement that it be associated with phonological content, it must be reduced as much as possible. The deletion algorithm operates according to the Economy of Pronunciation principle, constrained only by the kinds of vocabulary items available in a given language. In Igala, however, plural DPs are resumed either by personless and numberless RPs, or by fully matching RPs. I argue in this paper that chain reduction is determined syntactically, in that it can target different layers of the pronominal structure (perhaps phases, as argued in van Urk 2018). If multiple layers can be pronounced, several kinds of pronouns should be able to resume one and the same DP. I argue that this accounts for the fact that chain reduction appears to be optional for plural movement copies in Igala.

The second puzzle addresses the question of feature organization inside nominals and pronominals. On one view, the structure of nominals and pronominals is largely identical, in that pronouns realize DPs without a noun (Postal 1969; Elbourne 2001, 2005). Additionally, it has been argued that pronouns contain a functional head encoding person *below* projections encoding number and case (Moskal 2015; Smith et al. 2019). On another view, argued for in Ghomeshi & Massam 2020, number is different in nominals and pronominals, in that it is part of the nominal spine, but is bundled with and subordinated to person in pronouns. Given that the presence of number requires that person be present as well, I propose that, in Igala, number is bundled with person in pronouns, and that this bundling comes about through head movement of n, hosting person features, to Num.

The paper is organized as follows. In section 2, I discuss A′-dependencies in Igala and show that structures with RPs display movement properties. Section 3 addresses chain reduction and shows how

Igala bears on opposing proposals in the literature. In section 4 I discuss extraction out of relative clauses, which presents a puzzle for chain reduction. Section 5 concludes.

2. A'-movement in Igala

Igala is an SVO[1], isolating, tenseless, tonal language, with no agreement or case. Question words and focused (exhaustified) elements are fronted, with an optional sentence final particle *i* at the right edge. Examples (1)-(3) illustrate this with a subject and object question, and an object focus constructions.

(1) *Subject question*[2]
  ɛ́nɛ̃́$_1$ t_1 ɹ(e) ɔ̀gɛ̀dɛ̀ ī?
  who pick banana SFP
  'Who picked bananas?'

(2) *Object question*
  ɛ́ŋʷû$_1$ j-ǎ fà t_1 ī?
  what 3SG-IPFV pull SFP
  What is s/he is pulling?

(3) *Object focus*[3]
  ítɛ̃́bùlù$_1$ j-ǎ fà t_1 ī.
  table 3SG-IPFV pull SFP
  It's a table s/he is pulling.

Non-locally extracted subjects, shown in (4), relative clause subjects, as in (5), and extracted complements of certain prepositions, in (6), are obligatorily resumed in Igala.

(4) *Resumption of a long-distance extracted subject*
  Tʃídè$_1$ ù nɛ́dʒű kākíní *(ì$_1$) ɹ(e) ɔ̀gɛ̀dɛ̀ í.
  Chide 1SG think C 3SG pick banana SFP
  It's Chide$_1$ that I think [she$_1$] picked bananas.

(5) *Resumption of a relative clause subject*
  mà m(a) īmɔ̄t(ɔ) ōnōbùlɛ̄$_1$ k-*(**ī$_1$**) á ténè ɔ́lā mángòlò jī.
  3PL know child female   C-3SG IPFV like kind mango the
  'They know the girl$_1$ that [she$_1$] likes that kind of mangos.'

(6) *Resumption of a complement of a preposition*
  Òdʒímà$_1$ ù mâ kàkíní ɛ̄ t(a) īdó kp(aj) *(**ǒŋʷū**$_1$) í.
  Ojima 1SG know that 2SG dance.V dance.N with 3SG.STR SFP
  'It's Ojima$_1$ that I know that you danced with [her$_1$].'

Certain verbs also require their extracted complements to be resumed. I do not explore this requirement here, and mostly focus on resumption with subjects and complements of prepositions, however, movement tests below include some examples with object resumptives.

Questions, focus constructions, and relative clauses pass the standard movement tests: they exhibit strong and weak crossover, reconstruction for Principle A, idiom reconstruction, and island sensitivity. In this section, I show crossover and reconstruction examples, and discuss islands in §4.

Example (7) shows strong crossover. Locally extracted subjects do not get resumed in Igala (see (1)), therefore we can be certain that the higher subject pronoun is not a resumptive.

(7) *Strong crossover*
  ɛ́nɛ̃́$_1$ **ì**$_{2/*1}$ nédʒú kí **j**$_1$-ǎ ɲá dǔ?
  who 3SG think C 3SG-IPFV go win

---

[1]Igala might be underlyingly SOV, as has been argued for some Kru languages in Koopman 1984. This is not relevant for our purposes.

[2]Abbreviations: COP = copula, IPFV = imperfective, MULT = multiplier, N = noun, NMLZ = nominalizer, OBJ = object pronoun, POSS = possessive, SFP = sentence-final particle, STR = strong pronoun, V = verb.

[3]I translate focus constructions with English clefts, as they most closely represent the meaning of Igala focus constructions. However, these sentences do not involve cleft (bi-clausal) syntax in Igala, but are simple A'-movement structures.

Who$_1$ does s/he$_{2/*1}$ think [that s/he$_1$] will win?

With weak crossover, the situation is more complicated. As in many languages with obligatory subject resumption, weak crossover appears to not exist in Igala (see, e.g., Adesola 2006 on Yoruba):

(8)   *Weak crossover*
    ɛ̄nɛ̂$_1$ ī̄jē   ŋʷū$_{1/2}$ nédʒú kí **j$_1$**-ǎ   ɲá dǔ?
    who mother 3SG.POSS think C 3SG-IPFV go win
    Who$_1$ does his/her$_{1/2}$ mother think [that s/he$_1$] will win?

In languages with obligatory subject resumption, it is possible that the possessive pronoun in the subject DP is a resumptive pronoun, which would mean that examples like (8) might involve extraction from the local subject position, and would therefore not instantiate examples of weak crossover. One option is to use secondary crossover as a test (Safir 1984; Postal 1993).[4] In these structures, the wh-quantifier pied-pipes a larger phrase, such that the index of the trace does not match the index of the wh-quantifier. Crucially, it has been shown that the domain of secondary crossover effects exactly matches the domain where regular crossover is observed. In Igala, secondary crossover surfaces in both strong and weak crossover examples, as in (9)-(10), showing that the weak crossover effect does exist.

(9)   *Strong secondary crossover*
    [íj(e)   ɛ̄nɛ̂$_1$]$_2$ **ī̄$_{3/*1}$** nédʒú kàkīnī **ì$_2$**   tʃě gbédʒú   ì?
    mother who   3SG think C   3SG COP intelligent SFP
    'Whose$_1$ mother$_2$ does he$_{3/*1}$ think [she$_2$] is intelligent?'

(10)   *Weak secondary crossover*
    [íj(e)   ɛ̄nɛ̂$_1$]$_2$ ɔ̄mājē **ŋʷū$_{3/*1}$**   nédʒū kàkīnī **ì$_2$**   tʃě gbédʒú   ì?
    mother who   sibling 3SG.POSS think C   3SG COP intelligent SFP
    'Whose$_1$ mother$_2$ does his$_{3/*1}$ brother think [she$_2$] is intelligent?'

The use of an epithet in place of the matrix subject is another way to bring out weak crossover effects. Examples (11) and (12) confirm that Igala has both strong and weak crossover.

(11)   *Strong crossover with an epithet*
    ɔ́nɛ̄kɛ̀lɛ̄$_1$ k(i) **ɛ̄n(ɛ)** **ī̄dàdâ$_{2/*1}$** lɛ́ kâ kàkīnī **j$_1$**-ǎ   ɲá ɹá lɛ̄ dɛ̀   ī̄.
    man$_1$ C person fool   the say that 3SG-IPFV go run the COP SFP
    'That's the man$_1$ that the fool$_{2/*1}$ said [he$_1$] would run away.'

(12)   *Weak crossover with an epithet*
    ɔ́nɛ̄kɛ̀lɛ̄$_1$ k(i) [**ɔ́mājē** **ɛ́n(ɛ)** **ī̄dàdà$_{2/*1}$** lɛ́] kâ kakini **j$_1$**-ǎ   ɲá ɹá lɛ̄ dɛ̀   ī̄.
    man   C brother person fool   the say that 3SG.IPFV go run the COP SFP
    'That's the man$_1$ that the fool's$_{2/*1}$ brother said [he$_1$] would run away.'

Examples (13) and (14) show reconstruction for Principle A in focus extraction, for a trace and a resumptive pronoun respectively. There is a small caveat: when extracted, reflexives cannot be bound by anything except a pronominal subject. I assume this is due to an anti-cataphora effect.

(13)   *Principle A reconstruction in focus extraction*
    [īfō̄tó ɔ̄lā ŋʷū$_1$]$_2$ Chìdè gbɔ́ kàkíní ì$_1$/(*Ochala$_1$) lí t_2 ì.
    photo body 3SG.POSS Chide hear that 3SG   see SFP
    'It's a photo of himself that Chide heard he saw.'

(14)   *Principle A reconstruction in focus extraction*
    [ī̄fō̄tó ɔ̄lā ŋʷū$_1$]$_2$ ù   gbó kàkíní ì$_1$ t(a)   ī̄dó kp(aj) **ǒŋʷú$_2$**   ī̄.
    photo body 3SG.POSS 1SG hear that 3SG dance dance with 3SG.STR SFP
    'It's a photo of himself that I heard he danced with.'

The following examples show idiom reconstruction in focus constructions. (15) gives the example of an idiom, and (16) and (17) show that the idiomatic meaning persists in a relative clause and in focus extraction. Note that the verb *gʷo* requires its complement to be obligatorily resumed when extracted.

(15)   nǎ   ɲá gʷ(o) éɹé tʃɛ.
       1SG.IPFV go beat   leg break
       literal meaning: *'I'm going to break my leg.'*
       idiomatic meaning: *'I'm going to the bathroom.'*

(16)   CONTEXT: We are traveling and made a bathroom stop. Chide went to the bathroom and hasn't come back in quite a while.
       éɹé kì Chìdè l(e)-ō   ɲā gʷ(o) ū   tʃɛ   tʃě   gbānὲ.
       leg C Chide leave-3SG.OBJ go beat   3SG.OBJ break do.NMLZ be.long(time)
       ✓ *'The leg that Chide left to break took a long time.' (i.e., the leg-breaking took a long time)*
       ✓ *'Chide took a long time in the bathroom.'*

(17)   CONTEXT: We are traveling and made a stop at a gas station. We are ready to leave, but Chide is not there. I ask if she went to buy a drink.
       ῖ î, éɹé ì   ɲá gʷ(o) ū   tʃɛ   ì.
       no leg 3SG go beat   3SG.OBJ break SFP
       ✓ *'No, it's (her) leg that she went to break.'*
       ✓ *'No, she went to the bathroom.'*

To summarize, Igala has obligatory resumption of non-local subjects, complements of certain prepositions and complements of certain verbs. These RPs behave like movement copies, in that the structures containing them pass the standard movement tests.

In the following section I show that movement RPs surface with reduced features in Igala, discuss Landau's (2006) chain reduction theory and similar patterns that it has been applied to in the literature, and show how it can capture resumption patterns in Igala.

3. Resumption patterns and chain reduction in Igala

3.1. Reduced features of resumptive pronouns in Igala

In non-island extraction, RPs in Igala are obligatory in several contexts; in this section, I focus on two: (i) long-distance extracted subjects, and (ii) extracted complements of the preposition *kpaj* 'with'. When the extracted DP is 1st or 2nd person, the RP surfaces with reduced features, which I assume to be the result of *chain reduction*, following previous literature. Chain reduction is obligatory in subject extraction of singular DPs, as in (18), where a 1SG extracted pronoun can only be resumed by 3SG.

(18)   *Chain reduction in subject extraction of singular DPs*
       a.   Tʃìdê tʃě   mâ   kàkíní ù   dʒ(i) ítʃénì   lɛ.
             Chide do.NMLZ know that   1SG steal necklace the
             'Chide knows that I stole the necklace.'
       b.   **ōmí₁**   Chìdê mâ   kàkíní **ì₁/*ù₁**   dʒ(i) ítʃénì   lɛ.
             1SG.STR Chide know that   3SG/*1SG steal necklace the
             'It's me that Chide knows stole the necklace.'

When the extracted DP is 1/2PL, an RP matching in person and number is more acceptable than in the singular, though a 3SG pronoun is still preferred. Crucially, 1/2PL cannot be resumed by 3PL. In other words, if the RP expresses number, person must be expressed as well. This is illustrated in (19).

(19)   *Chain reduction in subject extraction of plural DPs*
       a.   Tʃìdê mâ   kàkíní à   dʒ(i) ítʃénì   lɛ.
             Chide know that   1PL steal necklace the
             'Chide knows that we stole the necklace.'

b. **āwá₁** Chìdê mâ kàkíní **ì/?à/*mà** dʒ(i) ítʃénì lɛ̄.
1PL.STR Chide know that 3SG/?1PL/*3PL steal necklace the
'*It's us that Chide knows stole the necklace.*'

In extraction of the complement of the preposition *kpaj* 'with', RPs for 1/2SG obligatorily surface without person features, as in (20), just as is the case in subject extraction.

(20) *Chain reduction in P-complement extraction of singular DPs*

a. Tʃìdê tʃě mâ kàkíní Ŏtʃálà t(a) īdó kp(aj) ŏmī̄.
Chide do.NMLZ know that Ochala dance.V dance.N with 1SG.STR
'*Chide knows that Ochala danced with me.*'

b. **ōmí₁** Chìdê mâ kàkíní Ŏchálà t(a) īdó kp(aj) **ŏŋʷù₁/*ŏmī̄₁**.
1SG.STR Chide know that Ochala dance.V dance.N with 3SG.STR/1SG.STR
'*It's me that Chide knows that Ochala danced with.*'

RPs for 1/2PL surface either as 3SG or with matching person features. Unlike in subject extraction, the fully matching RP does not appear to be degraded. Again, the RP cannot be 3PL.

(21) *Chain reduction in P-complement extraction of plural DPs*

a. Tʃìdê tʃě mâ kàkíní Ŏtʃálà t(a) īdó kp(aj) ăwā.
Chide do.NMLZ know that Ochala dance.V dance.N with 1PL.STR
'*Chide knows that Ochala danced with us.*'

b. **āwá₁** Tʃìdê mâ kàkíní Ŏtʃálà t(a) īdó kp(aj) **ŏŋʷù₁/ăwā₁/*ămā₁**.
1PL.STR Chide know that Ochala dance.V dance.N with 3SG.STR/1PL.STR/3PL.STR
'*It's us that Chide knows that Ochala danced with.*'

To summarize: a singular DP is resumed by a [-Person] RP, and a plural DP is resumed either by a [-Person, -Number] RP, or a [+Person, +Number] RP. Crucially, a plural DP cannot be resumed by a [-Person, +Number] RP; if plural number is expressed, person must be expressed as well.

3.2. Chain reduction

Landau (2006) proposes that Copy deletion is driven by economy constraints at PF, enforced by *P-Recoverability* and *Economy of Pronunciation*, as defined in (22) and (23).
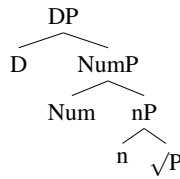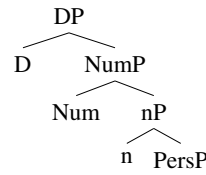
(22) *P-Recoverability*
In a chain $< X_1, ... X_i, ...X_n >$, where some X_k is associated with phonetic context, X_k must be pronounced.

(23) *Economy of Pronunciation*
Delete all chain copies at PF up to P-recoverability.

Taken together, the two principles allow for multiple copies in a movement chain to be spelled out, if they are associated with phonetic content (e.g., if they are in a position specified with some phonological requirement). Additionally, Landau argues that this predicts that, if possible, secondary copies must undergo partial deletion (depending on whether a more minimal form of an XP exists).

Pronouns have been argued to realize DPs without a noun (Postal 1969; Elbourne 2001, 2005), meaning that their structure above the nominal root would be identical. It has also been argued that person in pronouns is encoded on a functional head below projections encoding number and case (Moskal 2015; Smith et al. 2019). The structure of a lexical DP and a pronoun are given in (24) and (25), taken from Scott 2021.

(24) *Lexical DP*   (25) *Pronoun*

```
        DP                                        DP
       /  \                                      /  \
      D   NumP                                  D   NumP
          /  \                                      /  \
        Num   nP                                  Num   nP
             /  \                                      /  \
            n   √P                                    n   PersP
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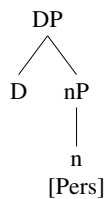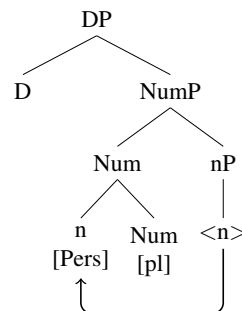
Crosslinguistic resumption patterns give support for the claim that person is encoded on a head separate from and below number in pronouns. In many languages, there is an asymmetry between person and number in resumption: while mismatches in person are tolerated, matching in number is obligatory. We see this in Dinka Bor, where a plural DP is resumed by a 3PL pronoun and singular DPs are not copied (van Urk 2018); in Nupe (Kandybowicz 2007) and Swahili (Scott 2021), where 1/2SG is resumed by 3SG, and 1/2 PL is resumed by 3PL.

Chain reduction will yield RPs with reduced feature matrices, just in case the language has pronouns that realize a structure containing a pronoun that has had part of its structure deleted. For example, if Person is encoded on nP in pronouns, and chain reduction results in the nP being deleted, this will yield personless RPs, as long as the language has a pronominal element that spells out D and Num.

Igala poses a challenge to the claim that number is realized separately from person, as realizing plural requires that person be realized as well. First, in Igala, plural does not obligatorily survive chain deletion: 1/2PL DPs can be resumed by 3SG RPs. But if plural is retained, person must be retained as well, meaning that person and number form a bundle in the plural in Igala. There are therefore two positions to be reconciled. On the one hand there is evidence from chain reduction that number and person can be independent in pronouns, as person is lost while number is retained in resumption in languages like Dinka Bor, Nupe, and Swahili. On the other hand, in Igala the expression of plural number forces the expression of person, which would support the claim that person and number are bundled in pronouns. Ghomeshi & Massam (2020) claim, on independent grounds, that grammatical number forms a part of the nominal spine in nominals, whereas it is bundled with and subordinated to person in pronominals. I propose that this tension can be resolved if number and person are merged as separate heads in both the nominal and the pronominal spine, but (at least in some languages) come to be bundled through head movement. In the following subsection, I show how this can capture resumption patterns in Igala.

3.3. Chain reduction in Igala resumption

I propose that Number is privative, and that singular does not occur as a feature in syntax (Nevins 2011). This means that Num only has the value [plural]. I also propose that, if the DP is not plural, the Num head does not occur in the pronominal spine. The proposed structure of a singular pronoun is given in (26). I place the Person feature on n (as in van Urk 2018). In plural, I propose that person and number start out in separate projections, as argued for in previous literature, but in Igala end up being bundled through head movement of n (which hosts person features), to Num (e.g., Ritter 1991). This will derive the observation that plural cannot be expressed independently of person in Igala, while allowing us to maintain the obligatoriness of the deletion of some part of the structure as a result of chain reduction.

(26) *The structure of a singular pronoun*   (27) *The structure of a plural pronoun*

```
        DP                                              DP
       /  \                                            /  \
      D    nP                                         D   NumP
            |                                             /  \
            n                                           Num    nP
          [Pers]                                       /  \      |
                                                      n   Num   <n>
                                                   [Pers] [pl]
```

Let us see how this derives Igala resumption patterns, summarized in Table 1.

Extracted DP	Resumptive Pronoun
1/2 SG	✓ 3 SG
	* 1/2 SG
1/2 PL	✓ 3 SG
	✓ 1/2 PL
	* 3 PL

Table 1: Resumption patterns in A′-movement dependencies in Igala

In the singular, person features are obligatorily deleted. I propose that this means that chain reduction targets nP, as in (28). This presupposes that the spell-out of 3SG pronouns are the spell-out of the D layer; I assume that this is the spell-out of nominative or oblique case features. The lexical entries are given in (31).

(28) *Chain reduction in the singular*

DP
D   nP
     |
     n
   [Pers]
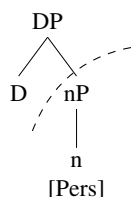
(29) *Vocabulary entries for singular pronouns*

a. [Nom] → i
b. [Obl] → $o\eta^{w}u$

In the plural, we have two options: either only the D layer is spelled out, or both Number and Person are spelled out. I propose that this means that two different layers can be deleted. If chain reduction targets the NumP, then the RP is 3SG; if it targets just the nP, the RP surfaces with all features, since n moves to Num and therefore escapes deletion. This is shown in (30), with the VI entries for D and Num in (31).

(30) *Chain reduction in the plural*

DP
D   NumP
   Num   nP
            |
  n   Num <n>
[Pers] [pl]
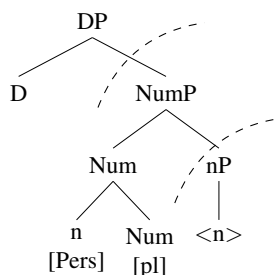
(31) *Vocabulary entries for 1PL pronouns*

a. [Nom + 1 + PL] → a
b. [Obl + 1 + PL] → awa

As foreshadowed above, this analysis allows us to capture the fact that, in some languages, person can be deleted while number survives. Such variation could be captured either by the variation in whether head movement occurs inside the nominal spine or not, or possibly by the timing of movement with respect to deletion – if movement precedes deletion, matching RPs surface, but if nP is deleted before n moves to Num, RPs are personless but match the extracted DP in number.

The second benefit of this analysis is that it makes chain reduction obligatory in all cases, by assuming that it occurs even if a fully matching RP surfaces, it is just obscured by head movement (see, e.g., Verb Stranding VP Ellipsis in Gribanova 2013).

If chain reduction is about economy, then why does not only the most reduced RP surface? Van Urk (2018) proposes that variation in chain reduction can be captured if partial deletion is restricted to phasal domains, and languages differ in what constitues a phase inside the DP. In our case, this would mean that

both nP and NumP are phases, and either can undergo deletion (contra Landau (2006) and Scott (2021), where the largest constituent possible undergoes deletion). In other word, as long as some amount of deletion happens, Economy of Pronunciation would be satisfied. I leave the details of this proposal, and what it means for an economy-based account, to be worked out in future work.

Finally, I wish to briefly note that chain reduction occurs only when the extracted element is a pronoun. For example, if a 3PL lexical DP is extracted, it can only be resumed by a fully matching pronoun, as illustrated by the contrast in (32b)-(32a) ; a 3SG RP is ungrammatical.

(32) a. **āmá₁** Tʃìdê mâ kàkíní Ŏtʃálà t(a) īdó kp(aj) **ŏŋʷù₁/ǎmā₁**.
 3PL.STR Chide know that Ochala dance.V dance.N with 3SG.STR/3PL.STR
 'It's them that Chide knows that Ochala danced with.'

 b. **ām(a) ígbèlé lɛ̄₁** Tʃìdê mâ kàkíní Ŏtʃálà t(a) īdó kp(aj) *****ŏŋʷù₁/ǎmā₁**.
 PL girl the Chide know that Ochala dance.V dance.N with 3SG.STR/3PL.STR
 'It's the girls that Chide knows that Ochala danced with.'

This means that chain reduction is only possible in movement copies of pronouns, but not of lexical DPs Igala, possibly giving additional support to the claim that the structure of nominals and pronominals differs.

4. Extraction out of relative clauses

In the final section, I present puzzling data from extraction out of relative clauses in Igala, where resumption patterns suggest a non-movement analysis, but several tests identify relative clauses as movement sensitive. I do not offer an analysis of this pattern here, but show it because it presents a potential challenge to the claim that fully matching pronouns in a language with chain reduction must indicate a non-movement dependency.

First, A′-dependency into a relative clause in Igala is fully grammatical, as shown in focus extraction out of a relative clause in (33). Note that the fronted object may optionally be resumed; this is generally not possible in extraction from complements of bridge verbs, unless the verb specifically requires an object, which *ténè* 'want' does not.

(33) a. mà m(a) īmɔ̄t(ɔ) ōnōbùlɛ̄ k- j-ǎ ténè ɔ́lā mángòlò jī
 3PL know child female C 3SG.IPFV want type mango the
 They know the girl who likes that kind of mangos.

 b. ɔ́lā mángòlò jī₁ mà m(a) īmɔ̄t(ɔ) ōnōbùlɛ̄ k(i) j-ǎ ténè (mà₁)
 type mango the 3PL know child female C 3SG-IPFV want 3SG.OBJ
 It's that kind of mangos that they know the girl who likes (them).

RPs in relative clauses must surface with matching person and number features, both in the singular and in the plural. This is illustrated for subject extraction in (34) and (35).

(34) a. Chìdê tʃě l(i) ítʃénì k-ù dʒí lɛ̀.
 Chide do.NMLZ see necklace C-1SG/3SG steal the
 'Chide saw the necklace that I stole.'

 b. **ōmí₁** Chìdê l(i) ítʃénì k-**ù₁/*ì₂** dʒí ì.
 1SG.STR Chide see necklace C-1SG/3SG steal SFP
 'It's me that Chide saw the necklace that I stole.'

(35) a. Chìdê tʃě l(i) ítʃénì k-à dʒí lɛ̀.
 Chide do.NMLZ see necklace C-1PL steal DEF.DIST
 'Chide saw the necklace that we stole.'

 b. **āwá₁** Chìdê l(i) ítʃénì k-**à₁/*ì₁** dʒí ì.
 1SG.STR Chide see necklace C-1PL/*3SG steal SFP
 'It's us that Chide saw the necklace that we stole.'

(36) and (37) show relative clause extraction of a complement of P. Again, RPs must surface with

both person and number features.

(36) a. Chìdê tʃě   m(a) ā-kʷ(o) éŋʷū k-ì kʷ(o) ómī̄ lɛ́
Chide do.NMLZ know NMLZ-paint thing C-3SG paint 1SG.STR the
'Chide knows the painter who painted me.'

b. **ōmí₁** Chìdê m(a) ākʷ(ɔ) ɛ́ŋʷū k-ì kʷɔ **(ó)mī̄₁/*oŋʷu₁** lɛ́
1SG.STR Chide know NMLZ-paint thing C-3SG paint 1SG.STR/3SG.STR the
'It's me that Chide knows the painter who painted me.'

(37) a. Chìdê tʃě   m(a) ā-kʷ(o) éŋʷū k-ì kʷo wa lɛ́
Chide do.NMLZ know NMLZ-paint thing C-3SG paint 1PL the
'Chide knows the painter who painted us.'

b. **āwá₁** Chìdê m(a) ā-kʷ(ɔ) ɛ́ŋʷū k-ì kʷɔ **(á)wā₁/*oŋʷu₁** lɛ́
1SG.STR Chide know NMLZ-paint thing C-3SG paint 1PL.STR/3SG.STR the
'It's us that Chide knows the painter who painted us.'

These kinds of contrasts in RPs have been used to argue that reduced RPs are copies of movement, whereas RPs with a full array of features are base generated bound pronouns (Scott 2021; see Sichel 2014 for arguments that both movement and base-generated resumptives can coexist in a single language). However, several tests suggest that A′-dependencies into relative clauses in Igala do involve movement. (38) shows Reconstruction for Principle A in relative clauses.

(38) *Reconstruction for Principle A*
[ìfòtó ɔ̄lā ŋʷū₂]₁ ù m(a) ímɔ̄t(ɔ̄) ónōbùlē k-ì₂ t(a) ī̄dó kp(aj) ǒŋʷù₁ ī̄.
picture body 3SG.POSS 1SG know child female C-3SG dance.V dance.N with 3SG.STR i.
'It's a photo of herself that I know the girl who danced with it.'

Gould & Scott (2019) use the example in (39) to argue that a certain type of relative clauses in Swahili are not islands for movement. The example is here replicated for Igala.

(39) ù d(ɔ) ám(a) ɛ̄n(ɛ) ôgá m-edʒì k(i) ūɲ(i) ógʷù jí k(ɔ) ám(a) ōŋʷù ŋʷ(u)
I call PL person sick MULT-two C house medicine the take.PL PL medicine to
óbōtʃī̄ dū k(i) ì d(u) ɛ̄dʒū tɛ̄ mā lɛ̀.
doctor every C 3SG take eye place 3PL the
'I called two patients that this pharmacy gave pills to every doctor that treated them.'

In (39), inverse scope is possible in Swahili, and it is also possible in Igala (meaning: *for each doctor, there are two patients who are treated by that doctor and I called each pair of those patients*).

The reconstruction and scope data for Igala suggest that the A′-dependency into the relative clause involves movement. This would mean that chain reduction does not apply to all movement chains in all kinds of constructions. Extraction out of relative clauses in Igala should be investigated in more detail, so I leave this as a puzzle here.

Finally, I should note that there are islands in Igala; for example, an A′-dependency into adjunct clauses as in (40) is ungrammatical, with or without RPs.

(40) *Adjunct islands in Igala*

a. ómā lɛ́ kʷ(o) ɔ́mɔ̄ tāk(i) Ǒtʃálā hʲ òdʒ(e) àbātʃà.
child the leave there before Ochala cook oje abacha
'The child left before Ochala cooked oje abacha.

b. *ɛ́nɛ̃́₁ ómā lɛ́ kʷ(o) ɔ́mɔ̄ tāk(i) ì₁ hʲ òdʒ(e) àbātʃà?
what child the leave there before 3SG cooked oje abacha
**'Who did the child leave before (s/he) cooked oje abacha?'*

c. *ɛ́ŋʷū̃́₁ ómā lɛ́ kʷ(o) ɔ́mɔ̄ tāk(i) Ǒtʃálā hì (ū₁)?
what child the leave there before Ochala cooked 3SG.OBJ
**'What did the child leave before Ochala cooked (it)?'*

5. Conclusion

In this paper I explored resumption patterns in the Benue-Congo language Igala, contributing to the recent literature which analyzes RPs with reduced features as the result of chain reduction in A′-movement constructions. Chain reduction tends to delete person features and preserve number, so that 1/2SG DPs are resumed by 3SG RPs, and 1/2PL DPs are resumed by 3PL RPs. In Igala, however, number is not obligatorily preserved, but if it is, person must be preserved as well. I proposed that only [Plural] is present as a Num head in the nominal spine, and that it triggers movement of n, which hosts [Person], resulting in a bundled head. This allows us to reduce the variation in whether number is or is not bundled with person in pronouns to variation in whether there is head movement in the nominal spine.

Second, this paper contributes to our understanding of the workings of chain reduction. If it were only about economy, we would expect the biggest possible piece of the nominal spine to be obligatorily deleted, as argued by Landau (2006) and Scott (2021). The optionality that exists in Igala plural resumption shows us that this cannot be the case, as the most minimal pronoun (3SG) can resume plural DPs, but a pronoun with both person and number features is possible as well. This suggests that, while chain reduction may be driven by economy, it is in a way blind to its output: if both a more minimal and a less minimal RP can result from chain reduction, either can surface.

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